Introduction

In common parlance, to indemnify simply connotes standing for someone else's liability. This construction is deceptively reductive. To indemnify in its entirety is to enable. Enabling a son to risk living because he knows his father stands behind him. Allow the people to commence society on the pretext of the government making them good for their rights, and finally, empower cyclical commercial growth. We all indemnify each other, and by logic, we all depend on each other. Thus, in many ways, indemnification is the cornerstone of our history and modern civilisation. Continuing the march towards modernity, automation has become the obsession of the rational. To omit errors and enforce the process. It is not the artist but the manager who commands life. Smart contracts are an ode to this direction. This paper attempts to capture this explosion of blockchain technology via the lens of indemnity laws in the *Indian Contract Act 1872*. India is loudly quiet on the issue, and this lacuna must be addressed. Foremostly from the academic circle first.

Understanding Indemnity Under Indian Law

While interpretations as to the extent of the indemnity law are wide and varied, especially in English law. The Indian construction of the primary obligations codified in the *Indian Contract Act 1872* is, to say the least, rigid and opaque, yet elaborate in its intent. Indian law defines a contract of indemnity under Section 124 of the *Indian Contract Act, 1872.* It says, "A contract by which one party promises to save the other from loss caused to him by the conduct of the promisor himself or by the conduct of any other person is called a contract of indemnity."[1]

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[1] *The Indian Contract Act 1872, s 124.*

This highlights the two main parties involved. The indemnifier makes the promise to protect, while the indemnity holder is the one safeguarded against possible losses.[2]

The essential elements of an indemnity contract include a clear promise to save from loss, identification of specific contingencies triggering liability, and the establishment of compensation parameters. Unlike a contract of guarantee with three parties and its link to a different agreement, indemnity sets up a separate duty between just two parties. While guarantee involves answering for the debt or default of another, indemnity promises protection against loss generally.

Indian law gives indemnity a more limited meaning than English law. English law includes losses from events like accidents, fires, or natural disasters. Indian indemnity law covers losses caused by actions of people.

The Law Commission of India noticed this issue. In its 1958 report, the commission suggested broadening indemnity to cover cases where losses might or might not result from someone's actions.[3] This suggestion has not been acted upon, so the legal coverage of indemnity in India remains narrow even today. Though sections 124 and 125 of the *Indian Contract Act 1872* are not exhaustive in their treatment of the subject, and statutory indemnification is plural. The law commission recommendation comes at the behest of the sheer ubiquity of the influence and reliance on the particular laws for Indian commercial life.

Oracles, smart contracts and magic

The conditions of a smart contract are entered into code and the contract itself executes automatically. There is no need for human interaction because these digital protocols will execute and enforce the requirements as you've specified. Nick Szabo, who coined the term "smart contracts" in the 1990s, described them as "tools that formalize and secure computer networks by combining protocols with user interfaces."[4] Unlike traditional contracts requiring human enforcement, smart contracts automatically execute when triggering conditions are met.

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[2] *Pollock and Mulla, The Indian Contract Act, 1872 (16th edn, LexisNexis 2021) ch VIII, s 124.*
[3] Ibid
[4] *Nick Szabo, 'Formalizing and Securing Relationships on Public Networks' (1997) 2(9) First Monday https://doi.org/10.5210/fm.v2i9.548.*

Oracles are middleware solutions that bridge the gap between blockchain-based smart contracts and external data sources. As explained in the ChainLink whitepaper, oracles allow "smart contracts to access key off-chain resources like data feeds, various web APIs, and traditional bank account payments."[5] Without oracles, smart contracts would remain isolated from real-world information needed to trigger execution. For example, a weather oracle might feed temperature data into a smart contract to automatically trigger crop insurance payouts when temperatures fall below freezing. Consider a parametric crop insurance scenario: A farmer purchases insurance against drought. Rather than filing a claim and waiting for assessment, a smart indemnity contract connected to weather oracles automatically triggers compensation when rainfall data indicates drought conditions. This removes human intermediaries and potentially speeds up the indemnification process.

Research Questions

This paper addresses two fundamental questions:

1. Should smart contracts provide the legal certainty necessary for valid execution of indemnity contracts under Indian Law?

2. How can India's contract law framework adapt to accommodate automated indemnity agreements?

Roadmap And Potential Drawbacks

The research is limited by the scarcity of Indian case law directly addressing smart contracts and oracles. Additionally, technical legal capacity in Indian courts regarding blockchain technology remains developing. The analysis, therefore, draws on established indemnity principles while applying them to novel technological contexts. The paper proceeds in four parts: First, we have established the theoretical foundation of indemnity law and smart contracts. Second, we analyse practical applications of oracle-based indemnity contracts, identifying legal challenges. Finally, we consider counterarguments and propose regulatory solutions.

Smart Contracts and Oracles: Technical and Legal Understanding

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[5] *Chainlink, 'Chainlink: Next Steps in the Evolution of Decentralized Oracle Networks' (Whitepaper v2.0, 2021)* *https://research.chain.link/whitepaper-v2.pdf* *accessed 21 April 2025.*

Smart contracts operate on a fundamentally different execution model than traditional contracts. While conventional agreements rely on human actions for performance and enforcement, smart contracts execute automatically based on predefined code. They can be understood as "computer protocols able to execute clauses of a contract"[6] without requiring trust between parties.

Oracles, as defined in the ChainLink whitepaper, serve as "blockchain middleware that allows smart contracts to access key off-chain resources."[7] They address the "oracle problem" - the inability of blockchain systems to natively access external data. Without reliable oracles, smart contracts remain isolated from the real-world information necessary to trigger execution of contractual conditions.

Oracles can be classified into several types:

- Software oracles: Interface with online data sources (APIs, websites)
- Hardware oracles: Connect to physical world sensors (IoT devices)
- Inbound oracles: Provide external data to smart contracts
- Outbound oracles: Send blockchain information to external systems
- Consensus-based oracles: Aggregate multiple data sources to increase reliability

A critical legal uncertainty emerges: if an oracle provides incorrect data that triggers inappropriate contract execution, who bears liability? The oracle provider? The smart contract developer? Or the contracting parties? This question remains largely unaddressed in Indian jurisprudence.

Methodology

This research employs a multi-faceted approach:

Doctrinal Analysis: Identifying and analysing statutory provisions, case levels and sustainable principles relating to indemnity contracts and electronic evidence in India.

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[6] *Nick Szabo, 'Smart Contracts' (1994) https://www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/LOTwinterschool2006/szabo .best.vwh.net/smart_contracts_2.html accessed 21 April 2025.*
[7] *Chainlink, 'Chainlink: Next Steps in the Evolution of Decentralized Oracle Networks' (Whitepaper v2.0, 2021) https://research.chain.link/whitepaper-v2.pdf accessed 21 April 2025.*

Comparative Assessment: To identify potential regulatory models for India, approaches to blockchain based indemnity are evaluated in other jurisdictions, especially in the UK, Singapore and US for pointers

Technical-Legal Integration: Combining technical description of oracle with legal analysis on which portions of the law might be in violation by the technology being used.

This fusion of legal understanding with technological understanding has enabled us to have a full grasp how smart indemnity contracts interact with Indian legal frameworks.

Practical Application of Oracles in Indemnity

A parametric crop insurance scenario provides a basis to understand some of the practical challenges of oracle-based indemnity contracts. An insurance policy bought by a farmer means that should drought hit, the case is automatically awarded if rainfall is below a certain level. A smart contract connected to weather oracles does not require a claim to be filed by the farmer and the assessment happens automatically when weather data indicates a drought situation.

This system presents several legal complexities:

The **data source** then becomes critical for the first. Who provides the rainfall measurements? Government meteorological services, private weather stations, or satellite data? The reliability of these sources has a direct impact in the contract performance. If there are different sources which report something else, which one will hold sway? However, the data conflicts need to be preprogrammed in the smart contract, and their algorithms may not follow the normal principles a court deems reliable.

However, **liability of oracle errors** remains in an ambiguity. Who is responsible if the weather oracle reports incorrect data (showing drought when it doesn't exist or the other way around)? The oracle provider could claim to have just provided information without guaranteeing accuracy. The insurance company might claim they relied on the oracle in good faith. The contract platform might deny responsibility as merely an execution environment.

This triangulation of responsibility creates a legal vacuum that current indemnity jurisprudence struggles to address.

Third, the automaticity of execution removes **human judgment** that normally evaluates exceptional circumstances. Traditional indemnity allows for consideration of contributing factors, force majeure, or other mitigating circumstances. Smart contracts execute based solely on predefined conditions, potentially ignoring relevant contextual factors that might influence a court's determination of liability.

Judicial Enforceability and Legal Uncertainty

Indian courts face substantial challenges when evaluating whether indemnity conditions were actually met through oracle data. The technical complexity of blockchain systems, smart contracts, and oracle networks creates a knowledge gap that may impede judicial understanding and proper application of indemnity principles.

The gap between code execution and judicial recognition raises several concerns:

First, courts must determine whether oracle-triggered executions satisfy the requirements of a valid indemnity contract under Section 124. The automation of decision-making potentially deprives the traditional indemnity of its explicit 'promise to save from loss,' so to speak. Does code constitute a legally binding promise? Can an automated process truly embody the intention required for a valid indemnity?

Second, the principle established in *Gajanan Moreshwar Parelkar* that an indemnity holder can sue when liability becomes absolute raises questions about when exactly liability crystallizes in a smart contract context.[8] Is it when the oracle reports data, when the smart contract processes it, or when the transaction is confirmed on the blockchain? This temporal uncertainty creates ambiguity around when rights and obligations materialize.

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[8] *Gajanan Moreshwar Parelkar v Moreshwar Madan Mantri AIR 1942 Bom 302.*

Third, the precedent from *Osman Jamal and Sons Ltd.* regarding when indemnification obligations arise becomes complicated in an automatic execution environment.[9] The court held that obligations arise immediately after loss is incurred, but in a smart contract, execution and loss identification occur simultaneously. This collapses the temporal distinction that existing case law relies upon.

These challenges create legal uncertainty that undermines the primary benefit of smart contracts their ability to provide trustless, automatic execution. Paradoxically, the very mechanism designed to increase certainty in contract performance introduces uncertainty in legal enforceability

Counterarguments: The Case for Embracing Technology

However, the impediments identified, do not preclude the adaption of Oracle based smart indemnity contracts within the Indian legal context.

First, Oracles also help to reduce human error and accelerate claims processing. Indemnity claims today are cumbersome, involve paperwork, assessments, human judgment, all of which come with delays and mistakes. In disaster scenarios, timely indemnification is extremely important; automation triggered by Oracle is capable of verifying triggering conditions and executing compensation in near real time.

Second, blockchain's immutable record-keeping offers advantages over traditional documentation. After recording, blockchain transactions cannot be changed, and contract execution records are permanent and tamper resistant. In fact, this immutability may lend greater evidentiary certainty to the contract than paper contracts at risk of loss, damage or forgery.

Third, legal adaptation always occurs well after technological innovation. The UK Law Commission's advice on smart legal contracts does also note that new technologies come within the reach of existing legal frameworks through judicial interpretation, rather than

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[9] *Osman Jamal and Sons Ltd v Gopal Purshottam AIR 1929 Cal 208.*

through legislative overhaul.[10] Other contexts, where the adaptability of Indian courts has been shown, may point to the ability of Indian courts to apply existing indemnity rules to oracle-based contracts.

Another potential benefit of automated indemnity is that it could increase access to insurance or other risk protection goods for marginalized communities and therefore be included financially. Smart indemnity contracts can reduce administrative costs and support models of microinsurance in populations currently outside of traditional insurance markets.

Proposed Regulatory Solutions

While addressing these challenges, the benefits of the oracle-based smart indemnity contracts can be harnessed if India will have a comprehensive regulatory framework that will consist of the following elements:

1. Legal recognition of oracle providers and giving them legal obligations concerning data quality, security protocols and liability for negligent misreporting. If that recognition follows on models akin to financial market infrastructure providers or credit rating agencies, this would lead to a fiduciary responsibility commensurate with their role in contract execution.

2. A 'RegTech' certification framework under Reserve Bank of India or Securities and Exchange Board of India to certify oracles for their different use cases. This may be certified with minimum standards for data sources, verification mechanisms and security measures depending on the degree of criticality of the application.

3. Specific electronic evidence standards for blockchain and oracle data. This could include:

    o Simplified certification procedures for blockchain records

    o Legal presumptions regarding the integrity of properly certified oracle data

    o Standards for demonstrating chain of custody in oracle-to-blockchain data flows

4. Technology training for judges as a means of judicial capacity building, and setting up specialised benches on disputes relating to Blockchain technology. This would enable courts to make better use of technical evidence and apply suitable legal principles.

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[10] *Law Commission, Smart legal contracts: Advice to Government (Law Com No 401, 2021)* *https://lawcom.gov.uk/project/smart-contracts/* *accessed 21 April 2025.*

5. That raises the question of regulatory sandboxes following the Monetary Authority of Singapore model[11] to allow controlled testing of oracle-based indemnity applications in specific sectors. Such sandboxes might serve to create practical experience while bearing the risk.

6. Binding the technical embedding of legal rules in smart contracts to mandatory code audits and code functionality reviews, which will be done on smart contracts operating in environments above certain value thresholds. It would be a way to fill the void between technical execution and legal intent.

Conclusion

The world in its entirety and eternalness has manifested change as the fictional fulcrum of history. The march of time has always yielded the ever-old debate between the old and wise sage and the ambitious and young blood. This debate has today evolved between the centralised and decentralised, authority and code and government and industry. If history is our passenger, then India ought to charge ahead and embrace the ambitious line of the ever old debate. Yet, it is imperative to bask in the wisdom of the sage balancing and gaining both benefits. Thus, it is recommended that oracles should supplement rather than replace legal judgment in indemnity contracts. Hybrid models incorporating both automated execution for standard scenarios and human review for exceptional cases could balance efficiency with equitable considerations. Such models would preserve the benefits of automation while maintaining necessary human oversight.

Further research should explore several promising directions: AI-based adjudication systems that could introduce more sophisticated judgment capabilities into smart contracts, Multi-oracle consensus mechanisms that improve data reliability through aggregation, Third-party verification models that provide independent certification of oracle data, Legislative frameworks specifically addressing blockchain-based financial instruments, Cross-border enforcement mechanisms for international smart contract disputes.

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